LESSON PLAN-2023-24(S)

DISCIPLINE FLECTRICAL &	SEMESTER 2 ND	NAME OF THE TEACHING FACULTY: SRI SILU MALLICK, LECT.IN PHYSICS, MATH & SC. DEPT.
MET.ENGG BRANCH		GOVT. POLYTECHNIC, SONEPUR
Sub:ENGG. PHYSICS	No. of Classes/week-4	Theory Semester from date : 29.01.24 to 14.05.2024 No. of weeks :- 15 (excluding vacation)
Week	Class day	Theory
	1 st	Physical quantities - (Definition).
	2 nd	Definition of fundamental and derived units, systems of units (FPS, CGS, MKS and SI units).
1 st	3 rd	Definition of dimension and Dimensional formulae of physical quantities.
	4 th	Dimensional equations and Principle of homogeneity. Checking the dimensional correctness of Physical relations.
nd	1 st	Scalar and Vector quantities (definition and concept), Representation of a Vector – examples, types of vectors.
2	2 nd	Triangle and Parallelogram law of vector Addition (Statement only). Simple Numerical.
	3 rd	Resolution of Vectors – Simple Numericals on Horizontal and Vertical components.
	4 th	Vector multiplication (scalar product and vector product of vectors).
	1 st	Concept of Rest and Motion.
	2 nd	Displacement, Speed, Velocity, Acceleration & FORCE (Definition, formula, dimension & SI units).
3 rd	3 rd	Equations of Motion under Gravity (upward and downward motion) - no derivation.
	4 th	Circular motion: Angular splacement, Angular velocity and Angular acceleration (definition, formula & SI units).
	1 st	Relation between –(i) Linear & Angular velocity, (ii) Linear & Angular acceleration).
4 th	2 nd	Define Projectile, Examples of Projectile.Expression for Equation of Trajectory, Time of Flight, Maximum Height and Horizontal Range for a projectile fired at an angle, Condition for maximum Horizontal Range.
	3 rd	Work – Definition, Formula & SI units.
	4 th	Friction – Definition & Concept.
	1 st	Types of friction (static, dynamic), Limiting Friction (Definition with Concept).
	2 nd	Laws of Limiting Friction (Only statement, No Experimental Verification).
5 th	3 rd	Coefficient of Friction – Definition & Formula, Simple Numericals.Methods to reduce friction.
	4 th	Newton's Laws of Gravitation – Statement and Explanation.

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	1 st	Refraction through Prism (Kay Diagram & Formation)
11 th	2 nd	Fiber Optics – Definition, Properties & Applications.
	ard	Electrostatics – Definition & Concept.
	3	Electrostates
	4 ^{**}	Statement & Explanator of Dermittivity (ε) – Definition, charge.Absolute& Relative Permittivity (ε) – Definition, Relation & Unit
12 th	1 st	Electric potential and Electric Potential difference (Definition) Formula & SI Units).
	2 nd	Electric field, Electric field intensity (E) – Definition, Formale Unit.
	3 rd	Capacitance - Definition, Formula & Unit.Series and Faranei combination of Capacitors (No derivation, Formula for effective/Combined/total capacitance & Simple numericals).
	4 th	Magnet, Properties of a magnet.Coulomb's Laws in Magnetist – Statement & Explanation, Unit Pol(Definition).
13 th	1 st	Magnetic field, Magnetic Field intensity (H) - (Definition, Formula & SI Unit).
	2 nd	Magnetic lines of force (Definition and Properties), Magnetic Flux (Φ) & Magnetic Flux Density (B) – Definition, Formula & Unit.
	3 rd	Electric Current – Definition, Formula & SI Units.
	4 th	Ohm's law and its applications.
14 th	1 st	Series and Parallel combination of resistors (No derivation, Formula for effective/ Combined/ total resistance & Simple numericals).
	2 nd	Kirchhoff's laws (Statement & Explanation with diagram). Application of Kirchhoff's laws to Wheatstone bridge – Balanced condition of Wheatstone's Bridge – Condition of Balance (Equation).
	3 rd	Electromagnetism – Definition & Concept.
		Force acting on a current carrying conductor placed in a uniform magnetic field, Fleming's Left Hand Rule
	4 th	Faraday's Laws of Electromagnetic Induction (Statement on Lenz's Law (Statement) Fleming's Right Hand Rule,Comparison between Fleming's Bight Hand Bula and Eleming's Line that the state
15 th	1 st	LASER & laser beam (Concept and Definition)
	2 nd	Principle of LASER (Population Inversion & Optical Pumping
	3 rd	Properties & Applications of LASER
	4 th	Wireless Transmission – Ground Waves, Sky Waves, Space Waves (Concept & Definition)

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Sign. of Academic Co-ordinator Sign

Sign. of Subject Teacher

A. FI 01/24

Sign. of H.O.D(Math & Sc.)

LESSON PLAN-2023-24(9)

		2 21 24 to 14.05.2024 No. of
		The area Semester from date : 29.01.24 to 1
Week	No. of	Theory Sentescer vacation)
	Classes/week-4	weeks := 15 (cashe 2
		the invest Gravitational Constant (G)- Definition, Char
	1 st	
		Dimension. Dimension due to gravity (g)- Definition and Concept
	2 nd	Acceleration due to grad 7 to
		and G.
6 th	3 rd	Definition of mass and weight needed
		- Only
	Ath	Variation of g with altitude and depth (No derivation
	-	Explanation). Kepler's Laws of Planetary Motion (Statement
		only).
	1 st	Simple Harmonic Motion (SHM) - Definition & Examples.
	· ·	
-th		to the displacement velocity.
	2 nd	Expression (Formula/Equation) for displacement, verser,
		acceleration of a body/ particle in SHIVI.
	3 rd	Wave motion – Definition & Concept. Transverse and
		Longitudinal wave motion – Definition, Examples &
		Comparison.
	4 th	Definition of different wave parameters (Amplitude,
		Wavelength, Frequency, Time Period.
	1 st	Derivation of Relation between Velocity, Frequency and
	_	Wavelength of a wave
	2 nd	Ultrasonics – Definition, Properties & Applications.
	_	
8 th	3rd	Heat and Temperature – Definition & Difference
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	4 th	Units of Heat (FPS, CGS, MKS & SI).
	1 st	Specific Heat (concept, definition, unit, dimension and simple
		numerical)
	2 nd	Change of state (concept) Latent Heat (concept, definition
9 th		unit, dimension and simple numerical)
		sing single numerically
	3 rd	Thermal Expansion – Definition & Concept. Expansion of Solids
		(Concept)
-	ath	
	4	Coefficient of linear, superficial and cubical expansions of
	a St	Solids – Definition & Units. Relation between α , β & Υ
	1"	Work and Heat - Concept & Relation. Joule's Mechanical
		Equivalent of Heat (Definition, Unit), First Law of
ŀ	and	Thermodynamics (Statement and concept only)
	2""	Reflection & Refraction – Definition Laws of reflection and
10th		refraction (Statement only)
TO	3 rd	Pofractive in the second second
	3	Refractive index – Definition, Formula & Simple numerical
Γ	4 th	Critical Angle and Tatalian
		Definition & Evel
		Definition & Explanation,